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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,193	02/24/2004	Yoshiaki Okui	118827	1085
25944	7590	01/16/2008		
OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER BERHANU, SAMUEL	
			ART UNIT 2838	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/784,193

Applicant(s)

OKUI, YOSHIAKI

Examiner

Samuel Berhanu

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2 and 12-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 and 12-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

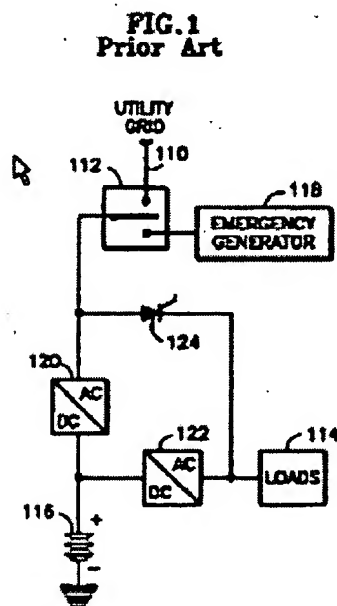
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 14-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Young et al.** [7061139] (hereinafter Young) in view of **Ijntema et. al.** (**USP 4,775,827**) (hereinafter **Ijntema**).

Regarding Claim 2, Young discloses all of the claim limitations except, a control circuit for controlling an output voltage of the converter to lower below a steady state, a judgment circuit that judges the degradation of the storage battery based on a charging time of the storage battery from a time when the control circuit controls the output voltage of the converter to return to the steady state to a time when the battery is fully charged.

Ijntema discloses a judgment circuit that judges the degradation of the storage battery based on a charging time of the storage battery from a time when the control circuit controls the output voltage of the converter to return to the steady state to a time when the battery is fully charged.

Regarding Claim 2, Young discloses an uninterruptible power supply (see figure 1, and column 1, lines 59-60) power to a load and charging floatingly to a storage battery (116) from a converter (120) connecting to an alternating current power source, and having a degradation judgment circuit for the storage battery, the degradation judgment circuit comprising;



Intema discloses in Figures 1 and 6, a control circuit (8) for controlling an output voltage of the converter to lower below a steady state, so as to cause the storage battery to discharge at a more limited current than the rated current of the storage battery, and so as to cause the converter to supply a part of a load current to the load; and a judgment circuit (12) that judges the degradation of the storage battery based on a charging time of the storage battery from a time when the control circuit controls the output voltage of the converter to return to the steady state to a time when the battery is fully charged (see Abstract and Column 2, lines 29-36, Column 5, lines

1 A device for determining the charge status of a battery (4) when it discharged by a load (R.sub.L) and/or when it is charged by a power-supply circuit (1) in which a value representing the nominal charging time and a discharging time respectively is stored in first (10) and second adjusting means (11) respectively and is applied to computing means (12). In response to clock pulses applied to the computing means by a clock means (13), the computing means calculate the charge status of the battery by expressing the elapsed discharging or charging time as a fraction of the adjusted discharging time and charging time respectively. The computed charge status is indicated by indicator means (14). During discharging and charging an actual charging

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Young's apparatus and include a control circuit including a timer for judging the degradation of the storage battery based on the charging time as taught by Ijntema in order to minimize the performance degradation of the battery and to provide accurate indication of the charge status of the battery without directly measuring the charging and discharging current.

Regarding Claim 12, Ijntema discloses in Figure 1, wherein said degradation judgment circuit comprises a timer for measuring the charge time of the storage battery.

Regarding Claim 14, Young discloses in Figure 1, wherein said converter is a rectifier and said load includes a direct-alternating current inverter and a load apparatus.

Regarding Claim 15, Yong discloses in Figure 1, wherein said converter is a rectifier, the uninterruptible power supply device further comprising a direct-alternating current inverter connected midway between the storage battery and the load (With regard to the particular location of the inverter, i.e., midway between the storage battery and the load, absent any criticality, is only considered to be an obvious modification as the courts held that there would be no invention in shifting the location of a structure of a device to another location if the operation of the device would not

thereby be modified. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)  
MPEP2144.04)

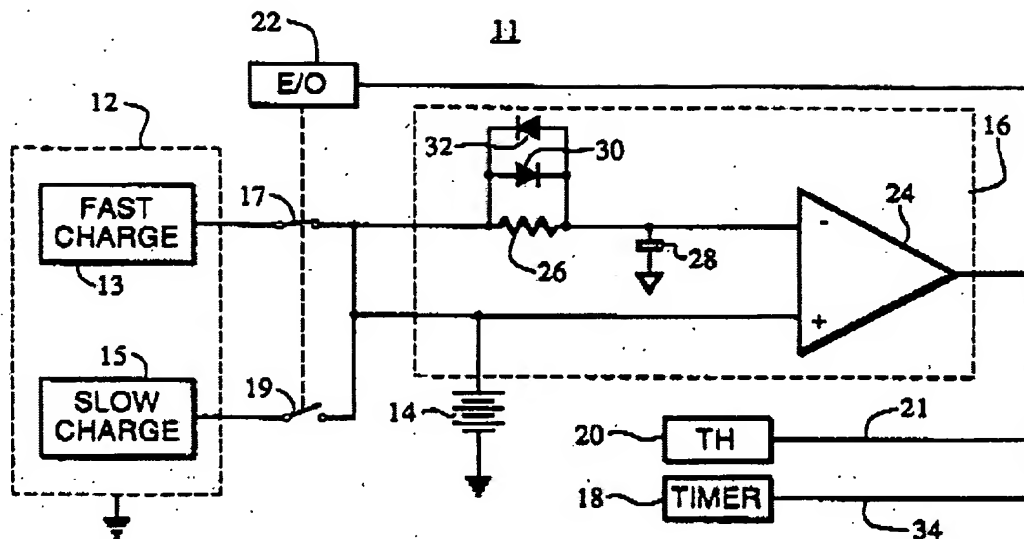
Regarding Claim 16, Yong discloses in Figure 1, wherein said converter comprises a mutual transducer of direct and alternating current, which connects to the power source in parallel with the load, and which connects the storage battery thereto.

Regarding Claim 17, Yong discloses in Figure 1, wherein said converter comprises a transducer of alternating and direct current which connects to the power source in parallel with the load, and which connects the storage battery and a direct-alternating current inverter.

Regarding Claim 19, Young in view of Ijntema discloses, wherein said control circuit connects to a trigger signal source which comprises a memory in which an operational schedule for the degradation Judgment is stored, memory and the converter starts to lower the output voltage at the timing of the trigger signal and the storage battery then starts to discharge.

3. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of Ijntema as applied to claim 2 above, and further in view of Pacholok (UPS 5,196,780).

Regarding Claim 13, Pacholok discloses, wherein said degradation judgment circuit comprises a timer (18) connecting to a comparator (24) for comparing a charging current (17 and 19) of the storage battery with a base current.



It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Young's apparatus and include comparator circuit for charging currents as disclosed by Pacholok in order to avoid overcharging.

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of Ijntema

Regarding Claim 18, as to controlling the output voltage of the converter to lower below the steady state is almost constant at what is equivalent to 10-50 % of the maximum current of the load. The current to be between 10-50 % of the maximum current, is only considered to be the use of "optimum" value. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have an application specific range of charging currents, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the

optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of Ijntema as applied to claim 2 above, and further in view of Faria et. al. (6295215).

Young and Ijntema do not disclose PWM.

Faria discloses in an AC power supply at column 10, lines 18-21,

in FIG. 7 is also applicable to single-ended transistor configurations. It will also be appreciated that a wide variety of other control circuits may be used with the invention, including, for example, average current mode control circuits using fixed frequency pulse-width modulation (PWM) techniques, as well as non-current mode control circuits that may be operated such that they provide control of current transfer through a DC/AC converter (e.g., inverter) circuit.

Faria discloses in an AC power supply at column 10, lines. 18-21:

It would have been obvious to a person having ordinary skill in the art at the time of invention was made to modify Young's apparatus and include PWM, as disclosed by Faria, in order to provide control of current transfer through a DC/AC converter (e.g., inverter) circuit.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP



§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on 571-272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2838

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Adolf Berhane/  
Adolf Berhane  
Primary Examiner  
Art Unit 2838

SB